

Attorney Docket: SIERRA #7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application)
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Stephen L. Palmer)
William R. Palmer) Art Unit: 1761
)
Serial No. 09/974,633) Examiner: S. Weinstein
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Filed: October 9, 2001)
)
For: FOOD DECORATING APPARATUS)
AND METHOD)

DECLARATION
UNDER 37 CFR 1.132

MAIL STOP RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

We, STEPHEN L. PALMER and WILLIAM R. PALMER, are co-inventors of the FOOD DECORATING APPARATUS AND METHOD disclosed and claimed in the above-identified pending U.S. Patent Application.

We are co-inventors of other inventions, both patented and unpatented. A number of our inventions, including the FOOD DECORATING APPARATUS AND METHOD referenced above, have been manufactured and sold and we are currently deriving income from some of these. The subject invention has been licensed by us and has attained considerable commercial success within a relatively short period of time.

Several commercially available products utilized to apply liquid decorating substances to food products are in existence. These products are unsatisfactory from several standpoints, and in particular in regard to their inability to apply liquid decorating substances to moist, soft frostings or other soft food products. One of the problems encountered in the prior art arrangements is that soft frosting and other similar food products do not provide sufficient support to permit satisfactory transfer of the liquid decorating substances from the various instruments employed.

Another problem is that the prior art devices tended to gouge and deform very soft substrates, such as fresh frosting. This not only resulted in an unsightly appearance, but the displaced frosting or other material interfered with deposit of the decorating liquid on the substrate.

We initiated a research program aimed at developing apparatus for applying a liquid decorating substance to both hard and soft edible foods in an effective manner. During the course of our research, we hypothesized and then concluded from our research that a nib having certain physical characteristics should be employed in combination with a hand held container holding a liquid decorating substance. These characteristics included high flexibility and high hydrophilicity.

We were unable to find preexisting writing instruments which possessed the necessary properties to satisfactorily write on soft food substrates. Pencils, ball-point pens and felt-tip markers were thoroughly tested. The pencils and ball point pens were incapable of creating any marking agent indicia on a frosting surface. The felt-tip markers tested were somewhat capable of transferring some ink to the frosting but not without causing significant damage to the surface of the frosting. Additionally, the frosting quickly coated the marker nib making further fluid transfer impossible.

It was determined that in the case of the tests involving felt-tipped markers that the marker nibs were too inflexible to effectively transfer fluid to the surface of soft frosting or other soft food materials without damaging the surface of the frosting. Furthermore, the marker nibs did not have the hydrophilicity characteristics we discovered to be necessary to achieve the desired results. Among the products tested was a commercially available product taught by U.S. Patent No. 6,299,374 to Naor et al.

While it was found that such products were indeed capable of writing on hard, dry food surfaces, such as for example a soda cracker or a starch wafer, the products were incapable of satisfactorily writing on soft foods such as fresh frosting or flavored gelatin products. In addition to the poor

transfer of writing or decorating agent and the deformation and damage caused by these products it is difficult to accurately control the position of the nibs relative to the substrate. This difficulty of control results from the fact that there is very little tactile feedback to the user when attempting to write on extremely soft substrates.

We next sought to locate and obtain writing nibs from nib manufacturers, both domestic and foreign. After examining several dozen samples of writing nibs from nib manufacturers, it was determined that all such nibs were too stiff or lacked the desired hydrophilicity needed to provide sufficient fluid transfer to the substrate.

Since we were unable to find a commercially produced nib which functioned as desired, a search was initiated to see if we could find a material which would produce a nib having acceptable fluid transfer properties when used to write on extremely soft substrates. A great many different types of materials were tested for this application. Materials tested included open cell polymer foams, sintered porous polymers, felted natural and synthetic fibers and loosely bundled natural and synthetic type fibers of a brush-like nature. While some of the materials tested possessed the desired degree of flexibility and other materials tested provided effective fluid absorption and transfer to substrates, only one material we tested, an open

cell foam of high flexibility and high hydrophilicity appeared to have the ability to function in the desired manner. To our knowledge no nibs constructed of this type of material ever have been constructed. We fabricated highly flexible nibs formed of acetalized polyvinyl alcohol open cell foam material of high hydrophilicity and believe we are the first to ever do so. The nibs we produced were examined under a microscope and compared to conventional felt-tipped pen nibs previously tested. We discovered that an additional factor was functioning in the open cell foam nibs which permitted them to function well for the intended application. That is their ability to absorb and hold approximately 10 times their weight in aqueous fluid and maintain a high presence of liquid at the outer surface of the nib. Further, we discovered that flexing of the open cell foam nib causes a unique pumping action to take place. More particularly, when the nib is flexed, volume of the cells thereof change and promotes flow of the fluid to the writing surface. The product of U.S. Patent No. 6,299,374 does not do this.

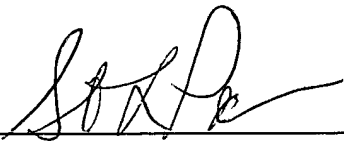
This means that whenever the open cell foam nib is brought into contact with the surface of another object, the fluid contained on the surface of the nib is instantly available to be transferred to the surface of that object. Additionally, because the cell structure of the nib is very open, capillary action can readily carry the fluid from the interior of the nib

to the surface of the nib to replace that fluid transferred to the object being written upon. We found that the combination of high flexibility, high hydrophilicity and high levels of fluid at the surface of the nib made it uniquely suitable for writing on extremely soft materials such as moist, soft frosting.

As pointed out in our application, the open cell foam nib we developed and fabricated was tested on a wide variety of food products, including ready to spread frostings, homemade frostings, soft breads, flavored gelatins, apples, crackers and other food items. The pens employing the nibs worked extremely well on hard, soft, moist and dry food products and met our expectations. On the other hand, commercially available products as exemplified by the prior art references of record relating to our application fell far short of attaining the desired results with soft foods, such as moist, soft frosting.

We hereby declare that all statements herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the above-identified application or any patent issued thereon.

Date: 9-24-04


STEPHEN L. PALMER

Date: 9/24/04


WILLIAM R. PALMER



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Filed: October 9, 2001)
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For: **FOOD DECORATING APPARATUS) SUMMARY OF INTERVIEW**
AND METHOD)

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On behalf of the inventors and local counsel for the interview (Mr. Lance Johnson, Reg. No. 32,531), the undersigned would like to extend sincere thanks and appreciation for the interview held on September 17, 2004 at the USPTO offices. At that interview, the inventors demonstrated pens constructed according to the teachings of the present invention and their ability to write on the surfaces of a hard cookie, a freshly frosted surface (a ready-to-use frosting made by Pillsbury and believed to be made of an oil-in-water emulsion), and pudding in a freshly opened ready-to-eat pudding container. Comparison examples included commercially available food marking pens made according to Naor U.S. 6,299,374 (as marked on the product

package), a "brush pen" of nonedible ink that is sold in art stores, and two types of hydrophobic foam (a cosmetic pad and a disposable paint brush) dipped in food coloring for a time sufficient to allow some of the food coloring to be drawn into the pores of each foam.

As seen by the Examiner, the Naor pens were hard tipped pens with an inflexible fibrous nib that required significant force to write. Because they do not appear to swell and based on the research of the inventors, it is believed that the type of fibrous nibs used in the Naor pens is made of hydrophobic fibers that are aligned and surface-bonded to create a series of directional capillary channels that move the ink from the reservoir to the tip. At best, very little ink could be deposited on the frosted surface using a gentle, controlled touch (unlike the fine motor skills that a child might be able to manage) until the tip clogged with frosting whereupon surface gouging became evident. The Naor pens were unable to write on the pudding surface and quickly collected a coating on the surface thereof. It was also pointed out to the Examiner that the package directions for using the Naor pens on frosting required that users allow the frosting surface to dry before attempting use of the pens - a detail that is not mentioned in the Naor patent disclosure and which significantly affects the scope of the assertions regarding frosting surfaces in that

disclosure.

The "brush pen" was similarly made of a fibrous nib that was substantially inflexible but for some minor movement at the tip end. It, too, was largely ineffective at marking the frosted surface or the pudding without gouging the surface and entraining a coating of product.

The hydrophobic foams did pick up some of the food dye after contact for 10-15 seconds. It is believed that the adsorption was due to the fine pore size of the foams and capillary action. When touched to the surface of the frosting or pudding, some of the adsorbed material would transfer to the food surface. The supply was quickly exhausted, however, and would have required a series of dip-and-wait periods to reload the foam. This is hardly acceptable to most users and to young, impatient children in particular.

The Examiner's attention was directed to the highly flexible nature of the pen nibs of the present invention. The hydrophilic foam exhibited both structural integrity and a high rate of continuous fluid transfer to the frosting and pudding surfaces. There was no perceptible delay in recharging the pen tip of the invention with food coloring.

The extended tip of the nib according to the invention also displayed an ability to "weathervane" or follow behind the direction of lateral pen movement. This action allowed the nib

to lay down on the soft food surface and transfer coloring to the surface along its entire contact length. The prior art pens and hydrophobic foams did not provide equivalent contact or transfer characteristics. The fibrous prior art tips are inflexible and transferred ink only at the very tip of the nib when in contact with the soft surface and trying to avoid damage thereto. Hydrophobic foams rapidly ran out of adsorbed ink and could not be rapidly recharged with aqueous edible food dye inks.

The Examiner also was informed that there was a licensee for the present invention and that its sales even for the first year were very substantial. Moreover, shortly before taking a license, the licensee had been approached by the manufacture of the Naor pens for a license. After inspection, the licensee chose the present invention over the Naor pens. Applicants asserted that such factors (high sales in the first year of introduction and recognition of superiority by one skilled in the art) represent classical indicia of unexpected results that rebut the assertions of obviousness presented by the Examiner.

Attention was then turned to the language of the pending claims. Applicants noted that the current claims already require the use of a nib made of a hydrophilic, open cell foam that was sufficiently flexible to prevent substantial deformation of the surface of soft foods by applying a pressure below the

yield force and by deflecting to weather vane responsive to lateral movement of the nib. Such existing claim terms distinguish from the inflexible fiber nibs used by Naor as well as the hydrophobic foams (even if such foams were disclosed for use in pens of the present type). The Examiner asked that comments be filed that addressed the secondary references and his assertions of a motivation to modify the Naor pens to use foam nibs. The Examiner expressed an intention to obtain translations of the foreign language documents before rendering a final opinion in any continuing application.

As to Williamson, it was argued that the use of a foam in the stamp pad of Williamson does not remedy the deficiencies of the combined teachings of the primary or secondary references. Stamp pads are intended and designed to avoid lateral deflection. Lateral movements tend to smudge and obscure stamped images, so there is no apparent motivation why one skilled in the pen art would look to stamp pads for solutions to problems associated with the deposit of edible inks on soft food surfaces, like fresh frosting or pudding.

Respectfully submitted,

By: 

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